F·A·A·M facility for airborne atmospheric measurements

FLIGHT FOLDER

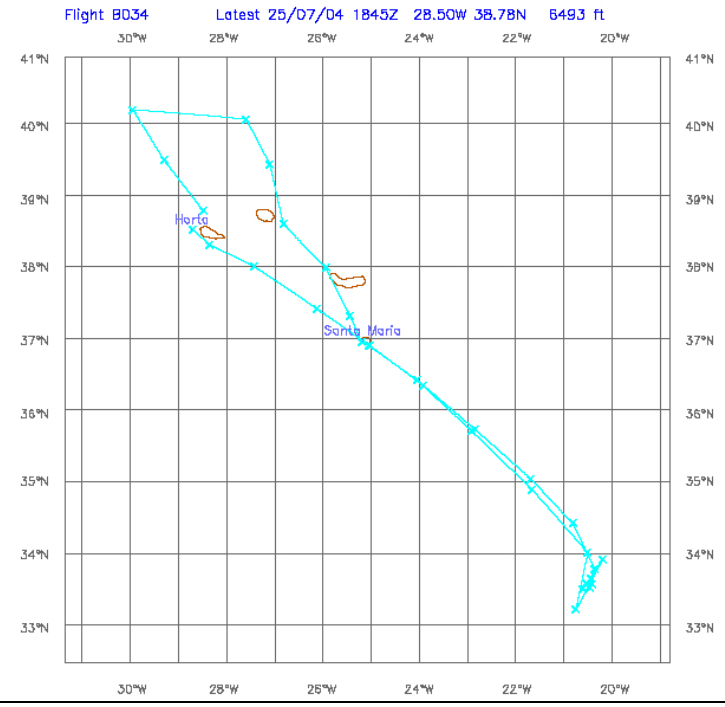
Flight No.:	B034	
Date:	25 Jul 2004	
Take Off	09:56:48	16:39:49
Landing:	15:08:38	18:53:46
Flight Time	5h11m50	2h13m57

Trials Instructions: ITOP - Interception of processed North American pollution to the east of the Azores and contrasting African air.

Operating Area: A box bordered from the TMA and 36 24N, 20W; 37N 30W; 31N; 31N, 20W (surface to FL250)

POB	Position	Name	Institute
1	Captain	Alan Roberts	Directflight
2	Co-pilot	Alan Foster	Directflight
3	Mission Scientist 1	Paul Monks	Leicester University
4	Flight Manager	Steve Devereau	FAAM
5	Core Chemistry/FWVS	Doug Anderson	FAAM
6	HCHO	Graham Mills	UEA
7	PTR-MS	Anne Hulse	UEA
8	PAN/TDL/PSAP	Jim McQuaid	Leeds University
9	PERCA	Mark Jacob	Leicester University
10	Peroxides	Brian Bandy	UEA
11	WAS	Lisa Whalley	Leeds University
12	AMS	Jonny Crosier	UMIST
13	Noxy	Dave Stewart	UEA
14	Mission Scientist 2	Ally Lewis	York University
15	Refuel Engineer	Andrew Boardman	Avalon Aero
16	CCM	Gaynor Ottaway	Directflight
17			
18			

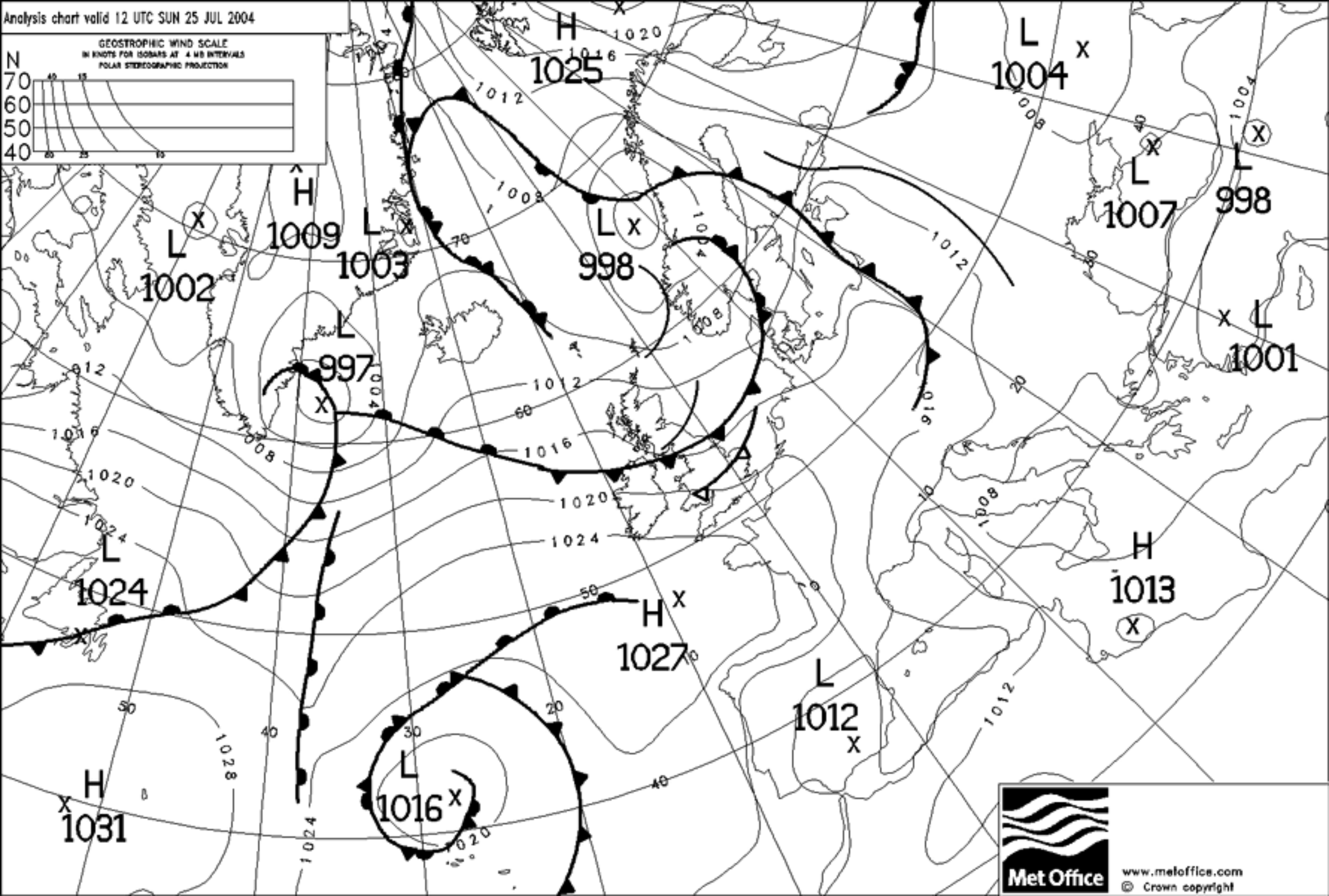
Track Plot:



FLIGHT SUMMARY

Flight No B034
Date: 25th July 2004
Project: ITOP
Location: Horta, Azores

Start Time	End Time	Event	Height (s)	Hdg	Comments
095648		T/O	0.0 kft	269	
100020					ASPs opened
100103	100515	Run 1	5.0 kft	122	Wet chem cals
100810					PSAP flow on
101110	105953	Run 2	13.0 kft	117	
101250					end J-W cal.
101357					TWC reset
101507					video rec. start
101550					HORACE crash
102620	102750				loss of data, HORACE ok
104850					SATCOM call, CCM to DFL
110000	111007	Profile 1	13.0 - 22.0 kft	130	1000ft/min
111022	112022	Run 3	22.0 kft	136	
112028	114037	Profile 2.1	22.0 - 4.8 kft	134	1000ft/min
114037	115116	Profile 2.2	4.8 - 0.10 kft	136	500ft/min
115130	115629	Run 4	0.1 kft	132	
115751	120356	Profile 3	0.1 - 3.0 kft	222	500ft/min
120000					SATCOM call, CCM to DFL
120537	121234	Run 5	3.0 kft	055	
121403	123144	Profile 4.1	3.0 - 15.0 kft	227	1000ft/min
121930		interrupt P4.1	8.0 kft	221	1000ft/min
122128		recommence P4.1	8.0 kft	048	1000ft/min
122658		interrupt P4.1	13.0 kft	048	1000ft/min
122904		recommence P4.1	12.9 kft	220	1000ft/min
124227	125227	Run 6	15.0 kft	016	
125423	125920	Profile 4.2	15.0 - 19.0 kft	223	
125928	130929	Run 7	19.0 kft	217	
125940					PSAP flow off
130210					PSAP flow on
130355					PSAP flow off
130430					PSAP flow on
130535					PSAP flow off
130755					PSAP flow on
					ice obscuring FFC
131019					PSAP flow off
131138	131507	Profile 4.3	19.0 - 22.0 kft	038	1000ft/min
131248					PSAP flow on
131338					PSAP flow off
131448					PSAP flow on
131515	132727	Run 8	22.0 kft	040	
131720					PSAP flow off
131850					PSAP flow on
132226		interrupt run	22.0 kft	042	
132407					PSAP flow off
132416		recommence run	22.0 kft	217	
132451					PSAP flow on
132615					PSAP flow off
					tail anti-ice on
132630					PSAP flow on
132919	133537	Profile 4.4	22.0 - 25.0 kft	039	
133146		interrupt P4.4	24.0 kft	046	
133300					PSAP flow off
133431		recommence P4.4	24.0 kft	220	


Analysis chart valid 12 UTC SUN 25 JUL 2004
GEOSTROPHIC WIND SCALE
IN KNOTS FOR ISOBARS AT 4 MB INTERVALS
POLAR STEREOGRAPHIC PROJECTION
N
70
60
50
40
H 1025
L 1004
L 1007
L 998
L 1001
H 1009
L 1003
L 1002
L 998
L 997
L 1024
H 1027
H 1013
L 1012
H 1031
L 1016
Met Office
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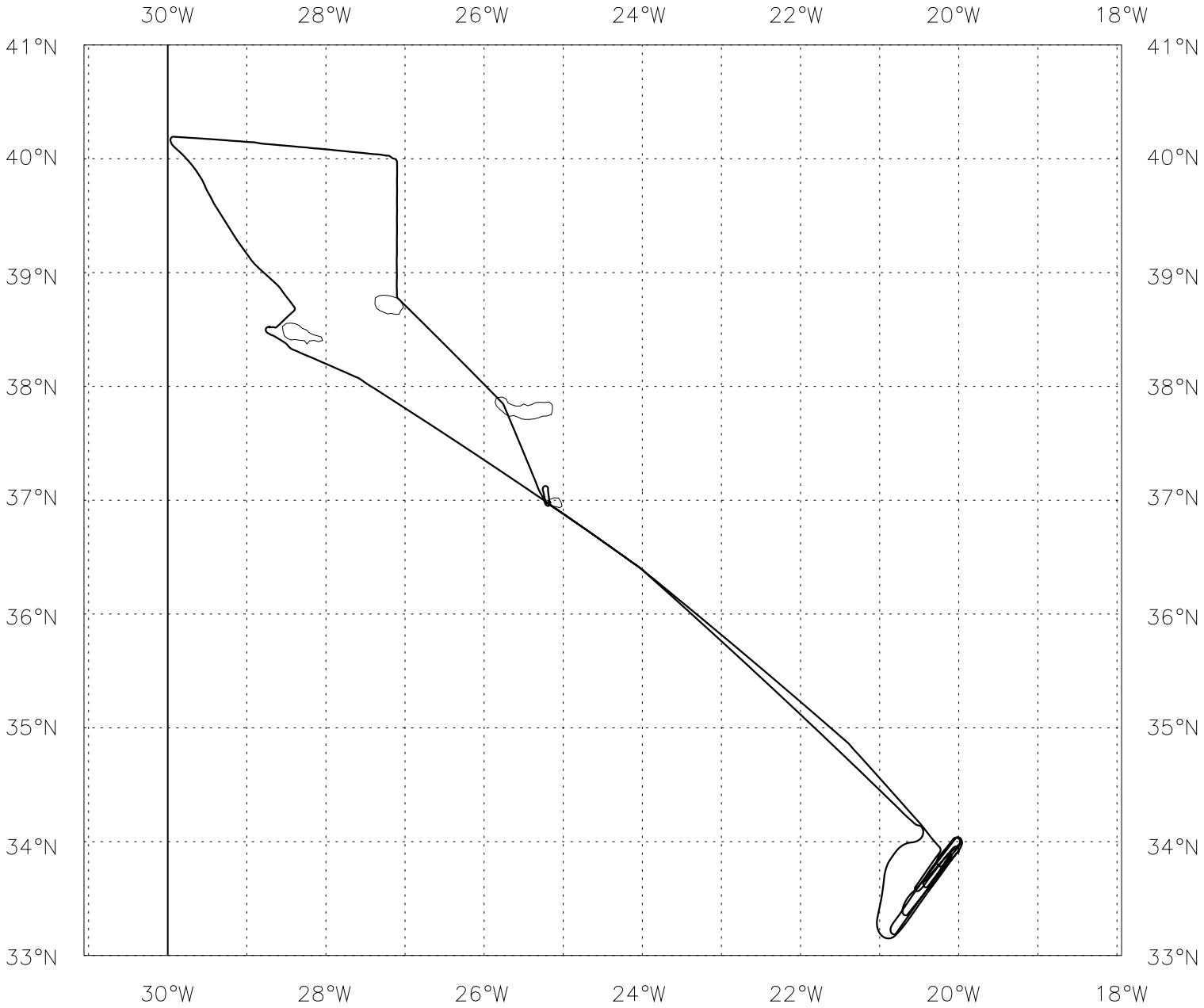
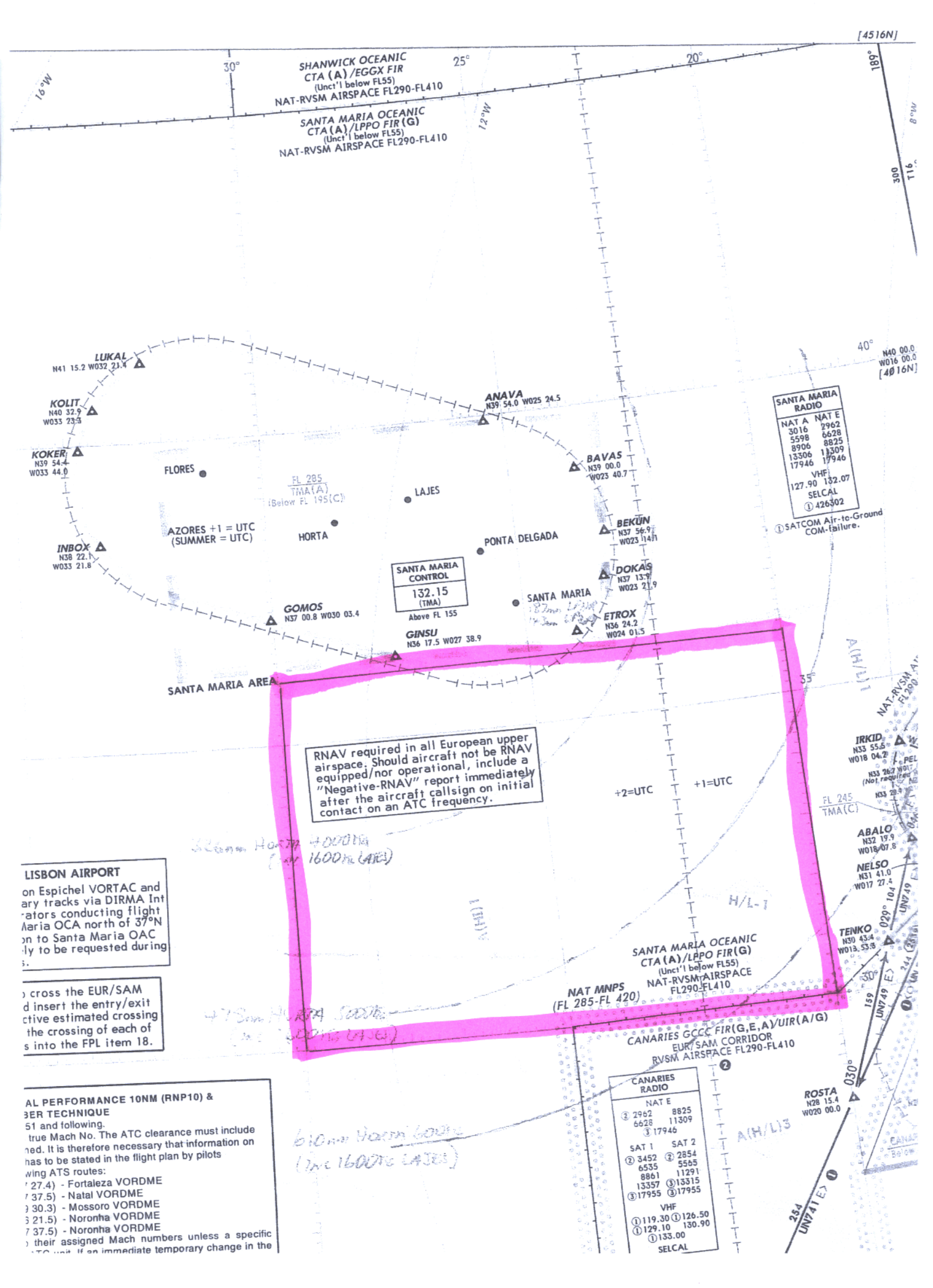
133600					PSAP flow on
133605	133910	Run 9	25.0 kft	221	
133727					tail anti-ice off FFC still obscured
133921	134721	Profile 4.5	25.0 - 32.0 kft	221	
135000					FFC improving
135011	135653	Run 10	32.0 kft	319	
135700	135955	Run 11	32.0 kft	038	
140534	141659	Run 12	32.0 kft	302	
141713	142352	Profile 5	32.0 - 25.0 kft	302	
142404	143356	Run 13	25.0 - 25.1 kft	300	
142800					SATCOM call, CCM to DFL
143403	145200	Profile 6	25.0 - 8.0 kft	298	
145207	150205	Run 14	8.0 kft	298	
150838		Land	0.03 kft	172	Santa Maria
151230	GPS final posn 36 58.46N 25 09.96W				
151442	INU final posn 36 57.86N 25 09.38W				
151540	INU to align				
162020	INU to Navigate				
163949		T/O	0.0 kft	171	Santa Maria
164240					PSAP flow on
164349	171933	Run 15	5.8 kft	331	QNH 1021 at Punta Delgada
165105					JW cal finished
165340					video rec. start
172034	172340	Run 16	5.8 kft	354	FL060
172356	172638	Profile 7	5.8 - 4.3 kft	356	
172645	173814	Run 17	4.3 kft	353	
173415					PSAP flow off
173715					PSAP flow on
174020	174526	Run 18	4.3 kft	267	
174539	174853	Profile 8	4.3 - 5.8 kft	272	
174900	181618	Run 19	5.8 - 6.0 kft	273	FL060
181838	184443	Run 20	6.0 kft	130	
184025					PSAP flow off
184200					PSAP flow on
184915					PSAP flow off
185346		Land	0.0 kft	269	Horta
185722	Final GPS posn. 38 31.26N 28 42.98W				
185800	Final INU posn. 38 31.26N 28 43.66W				

B034 Track 25-JUL-04




[4516N]
SHANWICK OCEANIC
CTA (A) /EGGX FIR
(Unct'l below FL55)
NAT-RVSM AIRSPACE FL290-FL410
SANTA MARIA OCEANIC
CTA(A)/LPPO FIR(G)
(Unct'l below FL55)
NAT-RVSM AIRSPACE FL290-FL410
16°W
30°
25°
20°
12°W
189°
300
LUKAL
N41 15.2 W032 21.4
KOLIT
N40 32.9
W033 23.3
KOKER
N39 54.4
W033 44.0
INBOX
N38 22.1
W033 21.8
GOMOS
N37 00.8 W030 03.4
GINSU
N36 17.5 W027 38.9
ANAVA
N39 54.0 W025 24.5
BAVAS
N39 00.0
W023 40.7
BEKUN
N37 56.9
W023 14.1
DOKAS
N37 13.9
W023 21.9
ETROX
N36 24.2
W024 01.5
FLORES
LAJES
HORTA
PONTA DELGADA
SANTA MARIA
AZORES +1 = UTC
(SUMMER = UTC)
FL 285
TMA(A)
(Below FL 195(C))
SANTA MARIA CONTROL
132.15
(TMA)
Above FL 155
SANTA MARIA AREA
40°
N40 00.0
W016 00.0
[4016N]
SANTA MARIA RADIO
NAT A NAT E
3016 2962
5598 6628
8906 8825
13306 11309
17946 17946
VHF
127.90 132.07
SELCAL
① 426302
①SATCOM Air-to-Ground COM-failure.
RNAV required in all European upper airspace. Should aircraft not be RNAV equipped/nor operational, include a "Negative-RNAV" report immediately after the aircraft callsign on initial contact on an ATC frequency.
+2=UTC
+1=UTC
35°
A(H/L)1
NAT-RVSM AIRSPACE FL290-FL410
IRKID
N33 55.5
W018 04.2
FL 245
TMA(C)
ABALO
N32 19.9
W018 07.8
NELSO
N31 41.0
W017 27.4
TENKO
N30 43.4
W013 53.8
029° 104
UN749
30°
159
UN749 E>
H/L-1
SANTA MARIA OCEANIC
CTA(A)/LPPO FIR(G)
(Unct'l below FL55)
NAT-RVSM AIRSPACE
FL290-FL410
NAT MNPS
(FL 285-FL 420)
CANARIES GCCC FIR(G,E,A)/UIR(A/G)
EUR/SAM CORRIDOR
RVSM AIRSPACE FL290-FL410
CANARIES RADIO
NAT E
② 2962 8825
6628 11309
③ 17946
SAT 1 SAT 2
② 3452 ② 2854
6535 5565
8861 11291
13357 ③13315
③17955 ③17955
VHF
①119.30 ①126.50
①129.10 130.90
①133.00
SELCAL
ROSTA
N28 15.4
W020 00.0
030°
A(H/L)3
254
UN741 E>
LISBON AIRPORT
on Espichel VORTAC and
ary tracks via DIRMA Int
-ators conducting flight
Maria OCA north of 37°N
on to Santa Maria OAC
-ly to be requested during
s.
) cross the EUR/SAM
d insert the entry/exit
ctive estimated crossing
the crossing of each of
s into the FPL item 18.
AL PERFORMANCE 10NM (RNP10) &
BER TECHNIQUE
51 and following.
true Mach No. The ATC clearance must include
ned. It is therefore necessary that information on
has to be stated in the flight plan by pilots
wing ATS routes:
27.4) - Fortaleza VORDME
37.5) - Natal VORDME
30.3) - Mossoro VORDME
21.5) - Noronha VORDME
37.5) - Noronha VORDME
their assigned Mach numbers unless a specific

B034: ITOP – Interception of processed North American pollution to the east of the Azores and contrasting African air.

Mission Scientists: Paul S Monks and Ally Lewis

Date: 25/7/04

Outline schedule:
06:00 UT - Power to aircraft - Warm-up
08:00 UT - Air Crew Briefing
09:15 UT – Security sweep
09:30 UT – Boarding deadline
10:00 UT - Take-off

Location: Working in a box bordered from the TMA and 36 24 N, 20W; 37N 30W; 31N, 30W; 31N, 20W (Surface to FL 250).

Aim: To intercept extensive layers of polluted air between surface and FL220 that left US domain 5 days ago, they have been torn from the main W-E flow and flung further south. Possible opportunities to intercept layers of air sampled by the NASA DC8 on 20/07/04. Exploration of contrasting air of continental African origin. If time, sampling of air near Pico will be made, for comparison with surface observations.

Sortie Detail

1. T+0 Take Off. Ascend to first available level for wet chemistry checks. (10)
2. T+10 En-route ascent to FL130 and run to ETROX (36 24N, 24 W) (70).
3. T+80 Head towards 34.5 N 20W, profile ascent to FL220 at 1000ft/min (10)
4. T+90 10 minute straight and level run at FL220 (10)
5. T+ 100 Profile descent to @ 1000ft/min until 5,000ft then 500ft/min to 100ft (30)
6. T+130, Profile ascent to 5,000ft at 500ft/min running to 34.5 N 19W (20)
7. T+150 Spiral ascent at 34.5 N 19W at 1,000ft/min to FL320 (if possible), breaking for 2 10 minute runs on a north-south heading (50)
8. T+200 Turn and head towards ETROX taking three levels for runs (FL320, FL250, FL 180) (70)
9. T+270 Head to Santa Maria (20)
10. T +290 Land at Santa Maria, for refuel (need ground power for instruments) (20)
11. T+0 Take-off, climb to FL150 for run to Horta
12. T+60 NNE Pico fly-by at 7,200ft for a 3 minute straight and level run, followed by 3 minute runs at 6,000ft and 5,000ft. (15)
13. T+75 Land at Horta.

CORE CHEMISTRY FLIGHT LOG

FLIGHT: B034	DATE: 25/07/2004	OPERATOR: Doug Anderson	PAGE: 1 of 2

LOCATION:	A box bordered from the TMA and 36 24N, 20W; 37N 30W; 31N; 31N, 20W (surface to FL250	PROJECT:	ITOP - Interception of processed North American pollution to the east of the Azores and contrasting African air.

GAS CYLINDER PRESSURES	N2	Argon/CO2	CO
PRE FLIGHT	1700 psi / 118 bar	psi / 20 bar	psi / bar
POST FLIGHT	1500 psi / 110 bar	220 psi / 17 bar	890 psi / 60 bar

TIME (GMT)	HEIGHT (Flight Level)	RUN #	CO SENSITIVITY (Hz/ppbV)	CO BACKGROUND (ppb)	CO BCKGRD.CNT.B (Hz)	CO CONC. (ppb V)	O3 ( )	NO (ppb)	NO2 (ppb)	NOx (ppb)	SO2 (ppb)
/07/04 :	?	?	102.67	58.28	5983.94	-	-	-	-	-	-
	Remarks: last calibration data from previous flight for comparison with today.										
25/07/04 08:10:00	ground		103.10	59.83	6168.09	-	-	-	-	-	-
	Remarks										
09:15:00	ground		104.36	60.87	6353.05	-	-	-	-	-	-
	Remarks										
09:42:30	ground		105.69	60.79	6388.66	108.168	25	7.36	4.96	12.33	-
	RemarksCal started as engine 3 spun up. End cal: 09:45:05										
10:03:55	5000'	R1	101.63	61.38	6237.63	107.636	73	-0.00	0.04	0.04	-
	Remarks: Cal run for wet chemistry. Flow lamp: 34.01, Pres Monocr: 0.96, Pres Cell: 7.16, Pres cal gas: 2.11										
10:48:30	FL130	R2	101.50	60.18	6108.16	113.551	62	-0.21	-0.20	-0.01	-
	Remarks: Mid run cal. Cal ended: 10:50:50										
11:11:22	FL220	R3	101.73	58.82	5984.40	87.462	59	-0.09	0.21	0.12	-
	Remarks: Cal started as start of run called. End of cal: 11:12:48										
12:06:03	FL030	R5	103.34	59.16	6113.25	75.481	57	-0.21	0.09	-0.12	-
	Remarks: Cal started few sec after start of run. End of cal: 12:08:24										
12:33:00	FL150		101.26	58.58	5931.84	70.179	52	-0.01	-0.00	-0.01	-
	Remarks: Cal between end of P4.1 and start of R6. end of cal: 12:35:21										
13:15:28	FL190		102.01	57.33	5847.76	83.095	55	-0.14	0.21	0.07	-
	Remarks:										
13:40:	~FL270										-
	Remarks: Pump vent pressure valve screwed on to prevent backflow as altitude increased through FL270										
14:24:25	FL250	R13	100.54	56.40	5670.14	91.2					-
	Remarks:										
14:52.40	FL080	R14	100.57	58.77	591`0.53	112.375	75	-0.11	0.14	0.03	-
	Remarks: Cal started 0:38 into run. End cal: 14:55:06										
15:16:20	Ground	Santa	Maria								-
	Remarks: CO inst. Crashed during shutdown/ aircraft power changeover. Due on ground for 1 hour.										
15:20:16	ground	-	101.13	59.39	6005.92	143.378	32	35.7	-4.9	30.7	-
	Remarks: Cal on ground. End cal: 12:22:39 air sample pipe open.										
16:20:04	ground	-	102.22	63.53	6494.26	850.837	3	494.1	-30.7	463.4	-
	Remarks: Pre power change check cal. Ended: 16:22:25 Air Sample pipe closed										
16:30:30	ground										-
	Remarks: CO crashed during aircraft ground power checks so rebooted ~30 seconds later.										
16:32:50	ground	-	104.70	64.15	6716.45	101.420	25	-0.01	0.48	0.46	-
	Remarks: CO cal as aircraft taxied. Air sample pipes closed. End of cal: 16:35:15										
16:44:05	FL060	R15	100.78	64.37	6487.21	114.987	57	-0.08	0.17	0.09	-
	Remarks: Cal run soon after takeoff. Cal Ended: 16:46:29										
	Remarks:										
	Remarks:										
	Remarks:										
	Remarks:										
	Remarks:										
	Remarks:										

CORE CHEMISTRY FLIGHT LOG

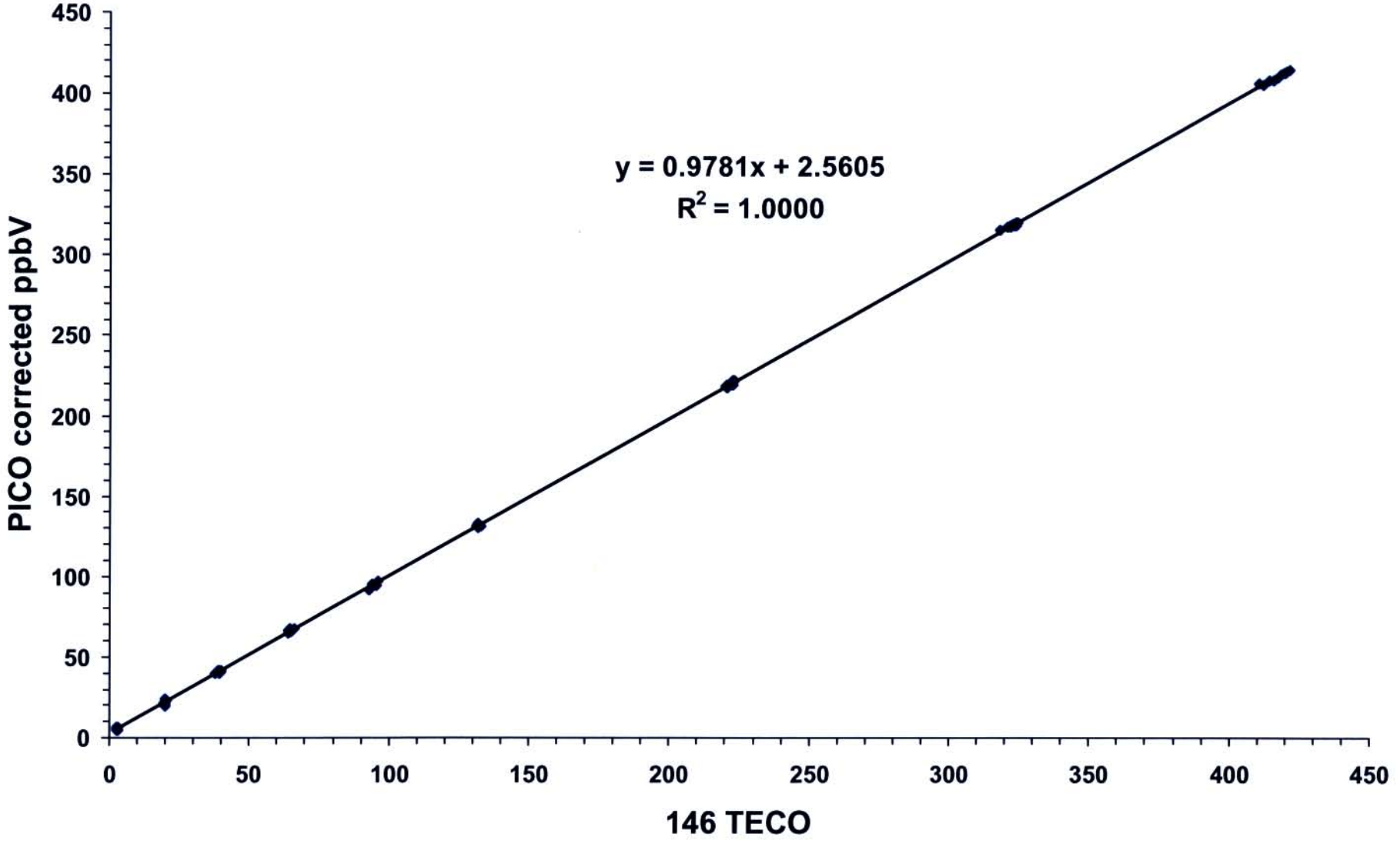
FLIGHT: B034	DATE: 25/07/2004	OPERATOR: Doug Anderson	PAGE: 2 of 2
LOCATION: A box bordered from the TMA and 36 24N, 20W; 37N 30W; 31N; 31N, 20W (surface to FL250		PROJECT: ITOP - Interception of processed North American pollution to the east of the Azores and contrasting African air.	

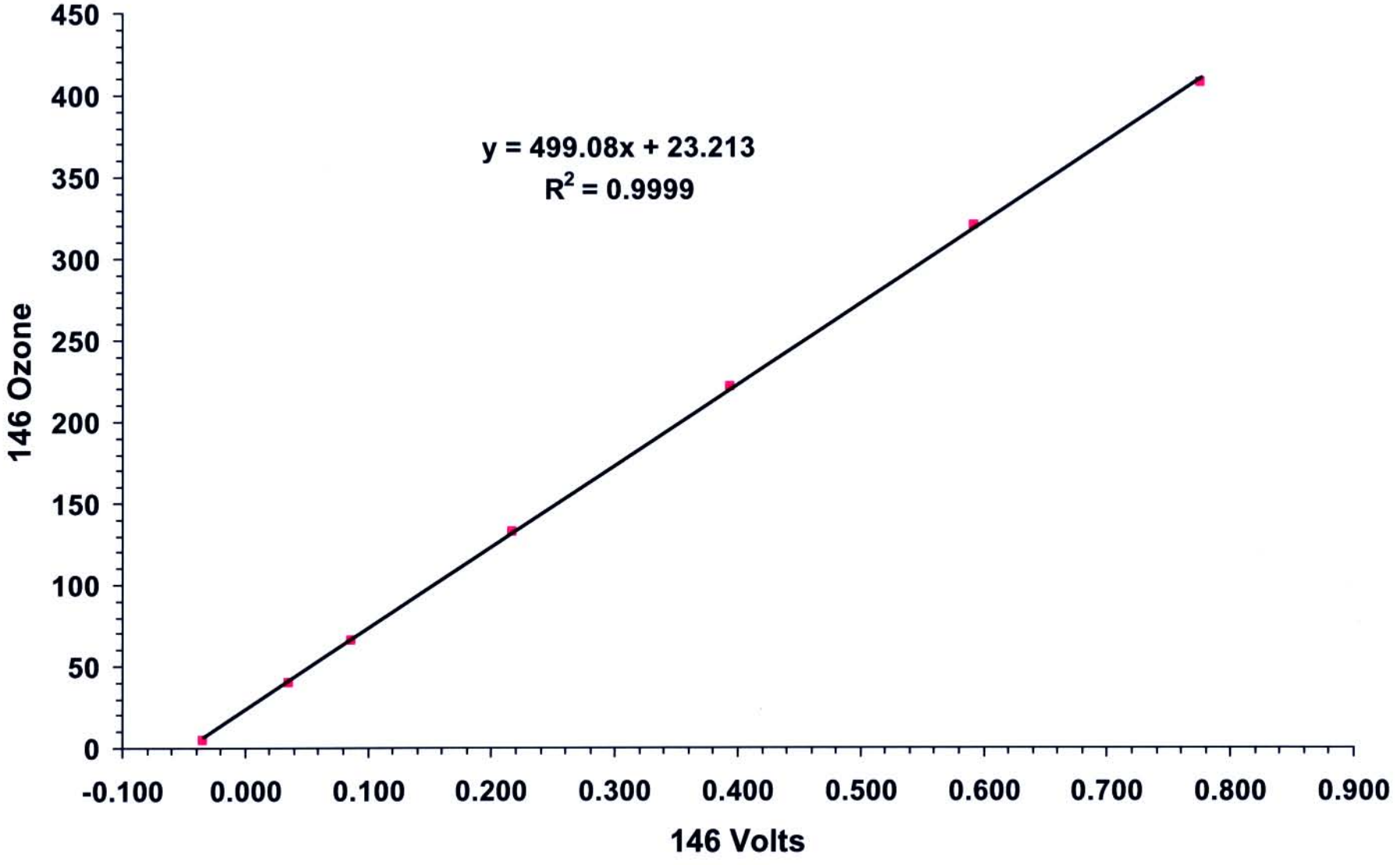
TIME (UTC)	HEIGHT (Flight Level)	RUN #	CO CONC ( )	O3 ( )
10:17:50	FL130	R2	114.3	64
10:18:00	FL130	R2	114.25	62
10:18:10	FL130	R2	113.34	63
10:18:20	FL130	R2	114.683	66
10:18:30	FL130	R2	117.764	65
10:18:40	FL130	R2	112.520	66
10:18:50	FL130	R2	112.721	66
10:19:00	FL130	R2	112.039	67
10:19:10	FL130	R2	112.727	64
10:19:20	FL130	R2	113.933	64
10:19:40	FL130	R2	113.933	64
10:19:50	FL130	R2	113.474	64
10:20:00	FL130	R2	114.373	65
10:20:10	FL130	R2	114.609	65
10:20:20	FL130	R2	112.872	66
10:20:30	FL130	R2	114.088	66
10:20:40	FL130	R2	114	65
10:20:50	FL130	R2	114	65
10:21:30	FL130	R2	113.40	66
10:21:30	FL130	R2	113.400	67
10:21:30	HORACE	BACK	114.400	66

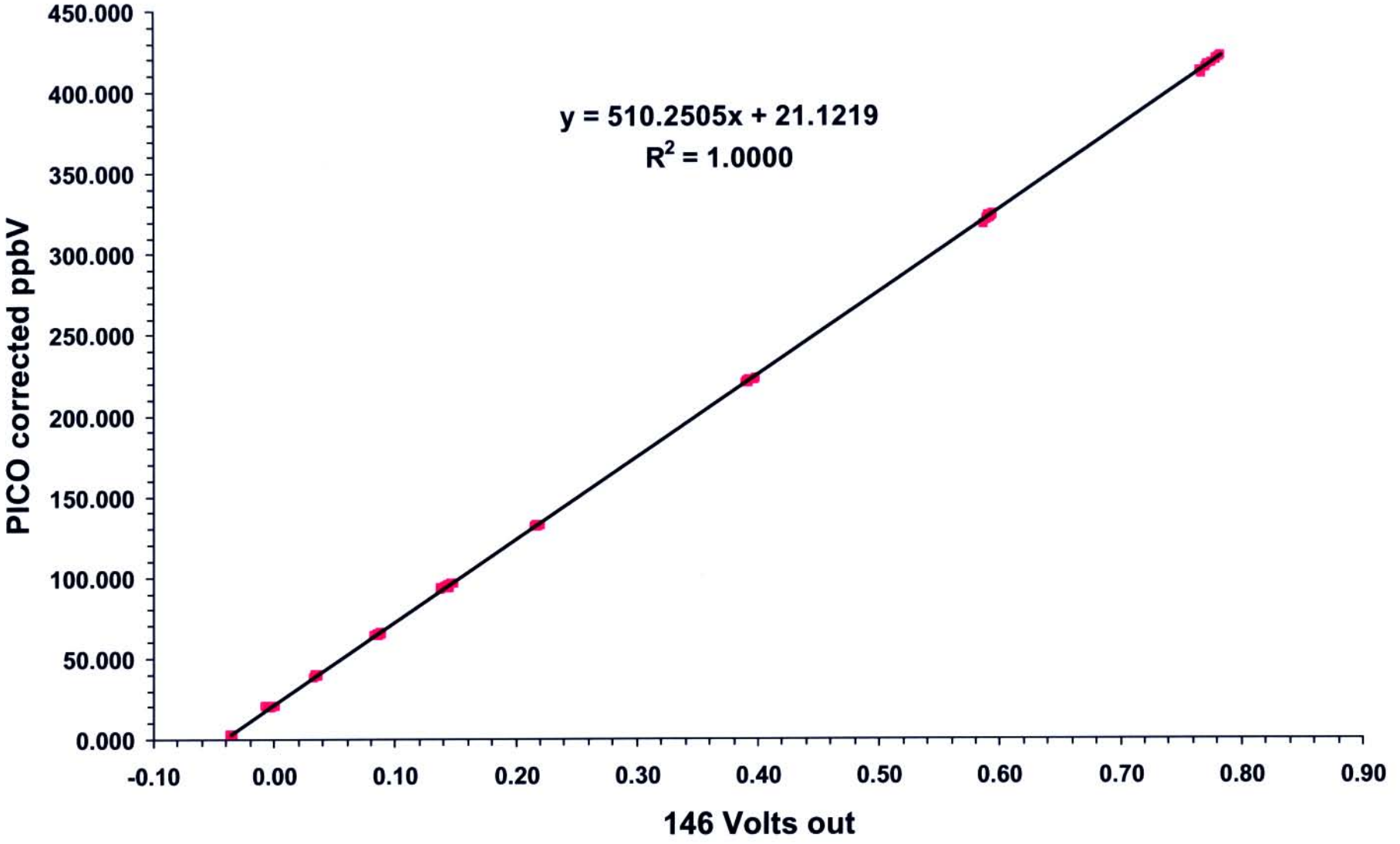
TIME (UTC)	HEIGHT (Flight Level)	RUN #	O3 ( )

TIME (UTC)	HEIGHT (Flight Level)	RUN #	O3 ( )
16:08:06			

CALIBRATIONS POST FLIGHT R084




y = 499.08x + 23.213
R2 = 0.9999
146 Ozone
146 Volts
450
400
350
300
250
200
150
100
50
0
-0.100
0.000
0.100
0.200
0.300
0.400
0.500
0.600
0.700
0.800
0.900


y = 510.2505x + 21.1219
R2 = 1.0000
PICO corrected ppbV
450.000
400.000
350.000
300.000
250.000
200.000
150.000
100.000
50.000
0.000
-0.10
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
146 Volts out

FWVS FLIGHT LOG

FLIGHT:	**B034**	**DATE:** 25/07/2004	**OPERATOR:** Doug Anderson	**PAGE:**	**1** of **1**
LOCATION:	A box bordered from the TMA and 36 24N, 20W; 37N 30W; 31N; 31N, 20W (surface to FL250)		**PROJECT:**	ITOP - Interception of processed North American pollution to the east of the Azores and contrasting African air.	

TIME (GMT)	**HEIGHT** (Flight Level or feet[''])	**RUN #**	**TEMP** (°C)	**DEW POINT** (°C)	**PUMP Volts**	**VOL. Flow** (l/min)	**LAMP Volts**	**Vis. Lamp Output**	**Instant F/l**	**Remarks**
08:31:00	ground	-	-	-	-	-	-	-	-	Powered up and clock checked
08:31:30	Ground	-	-	-	-	-	-	-	-	Lamp test (lit in 5 sec at 6.0)
10:01:10	5000'	-	-	-	-	-	-	-	-	Lamp lit and cal pump turned on
10:15:10	FL130	R2	-0.96	-13.0	4.00	2.06	4.50	0.39	12932	Pump on, level run
11:33:25	FL118		5	-1						Pump off. DP rose from –17 to –1 in time taken to walk between core chem. and FWVS racks
12:31:00	FL138	P4.1	1.07	-10.1	4.0	1.94	4.50	0.39		Pump back on
13:17:40	FL220		-17	-15.9	0.0	0.10	4.5	0.39	8281	Pump off due to pass through cloud
13:30:00	FL220	P4.4	-18.8	-19.4	4.0	2.0	4.5	0.37	6096	Pump back on now out of cloud
13:33:15	FL240	P4.4	-21.3	-19.3	0.0	0.22	4.5	0.37	5875	Pump off as enter cloud tops
13:34:35	FL240	P4.5	-21.6	-24.7	4.0	1.96	4.5	0.36	3212	Pump on – out of cloud
14:48:30	FL110		5.5	-6.9	0.0	0.05	4.5	0.41	5658	Pump off
14:57:00	FL080									Lamp & cal pump off as we head for refuel stop at Santa Maria
16:50:30	FL060	R15	11.9	0.8	0.0	0.07	4.5	0.4	76452	Cal pump on, lamp lit
17:14:50	FL060	R15		-10.5	4.0		4.5	0.41		Pump on
17:15:05	FL060	R15		-6.6	0.0	0.06	4.5	0.41		Pump off
17:20:55	FL060	R16								Lamp and cal pump switched off as rest of flight will be at this level or lower with little chance of the DP being below -10
										No calibration carried out as it was anticipated that the return leg would provide that opportunity

Flight Manager's In-Flight Log

Flight No B.034..... Date ...25/07/2004... Page ..1.. of ..3..

Video Tapes	
V8	
No.	
Ends	
FFC / RFC / DFC / UFC	

START POS'N

	GPS	INU
Lat	38 31.26 N	As GPS ←
Long	28 42.98 W	
Time	09 40 51	
Status	✓	

DRS	☑
HORACE	☑
SATCOM	☑

GMT	EVM	Height	QNH	Hdg	TAT	DP	DI Htr	Wind/ Sea st.
		HORACE	cash in preflight					
09 40 50		INU → NAV						
09 50 58		TAXI						
09 56 48		T/O	from Horta					
10 00 20		ASPs	open					
10 08 10		BSAP	flow on					
10 12 50		end	J-W zero cal					
10 13 57		TWC	reset					
10 15 07		video	recording starts.					
10 15 50		HORACE	crash					
10 17 00		Cabin temp	+21.3°C		20.7% RH	(at HORACE position)		
10 26 20	– 10 27 50	HORACE	running but data stopped recording?					
		nothing shows in DRS log file. All derived data						
		at zero during this time.						
	DLU	configuration -	error messages		(invalid port address)			
	for	PRTAFT	DLU					
10 48 50		SATCOM H call, CCM → DFC						
11 03 18		cabin temp	+19.4°C		14.8%	RH		
11 23 00		—"—	+19.0°C		10.7%	RH		
12 00 50		Satcom H, CCM → DFC						
12 38 00		—"—	+20.7°C		19.2%	RH		
12 59 40		BSAP flow off						
13 02 10		BSAP flow on						
13 03 55		BSAP flow off						
13 04 20		BSAP flow on						
13 05 35		BSAP flow off						

Flight Manager's In-Flight Log

Flight No B..034.... Date .....25/7/04..... Page ..2.. of ..3..

Video Tapes
V8
No.
Ends
FFC / RFC / DFC / UFC

	GPS	INU
Lat	35 42.68N	35 43.41N
Long	22 55.91W	22 57.13W
Time	14:30:24	14:30:57
Status	✓	✓

DRS	☑
HORACE	☑
SATCOM	☑

GMT	EVM	Height	QNH	Hdg	TAT	DP	DI Htr	Wind/ Sea st.
13 07 55	PSAP flow on			FFC obscured - ice on window				
13 10 19	PSAP flow off							
13 12 48	PSAP flow on							
13 13 38	PSAP flow off							
13 14 48	PSAP flow on							
13 17 20	PSAP flow off							
13 18 50	PSAP flow on							
13 24 07	PSAP flow off							
13 24 57	PSAP flow on							
13 26 15	PSAP flow off			hot air to camera				
13 26 30	PSAP flow on							
13 33 00	PSAP flow off							
≈ 13 36 00 / 13 37 27	PSAP flow on, fault icing off, FFC still iced up							
13 46 00	PSAP flow failing							
13 50 00	FFC improved vision, still some large patches of ice							
14 28 00	SATCOM H call,			CCM → DFC				
14 45 00	Cabin temp + 18.9°C 10.0% RH (top HORACE)							
≈ 14 40 00	SATCOM H,		Ali → John Mellon.					
≈ 14 50 00	—"—		Paul Marks → DFC					
15:08:38		Land	Sta. Maria		ASPs	open		
15 12:30		Stop, Sta Maria		GPS posn:	36 58.46N		25 09.96 W	
15 14 42				INU posn	36 57.80N		25 09.38 W	
15 15 40		INU →	GC Algin					

Flight Manager's In-Flight Log

Flight No B..034..... Date .....25/7/2004..... Page ..3.. of ..3..

pre-Taxi, Sta Maria.

Video Tapes	
V8	
No.	
Ends	
FFC / RFC / DFC / UFC	

	GPS	INU
Lat	36 58.46 N	GC-Align
Long	25 09.96 W	
Time	16 07 20	16 08 20
Status	✓4	

DRS	☑
HORACE	☑
SATCOM	☑

GMT	EVM	Height	QNH	Hdg	TAT	DP	DI Htr	Wind/ Sea st.
16 19 57		ASPs closed						
16 20 20		INU → ~~atta~~ Nav						
16 ~~3~~ 00		Taxi						
16 39 49		T/O, Santa Maria						
16 42 40		PSAP flow on				QNH	Punta Delgada = 1021 hPa	
16 49 05	]	JW calibration						
16 51 05								
16 53 40		videos on						
17 34 15		PSAP flow off						
17 37 15		PSAP flow on						
17 57 10		PSAP flow off						
17 58 10		PSAP flow on						
≃ 17 58 00		SATCOM, Paul → Horta scientists						
18 40 25		PSAP flow off						
18 42 00		PSAP flow on						
18 49 15		PSAP flow off						
18 53 46		Land at Horta						
18 57 22		final GPS	posn:	38	31 · 26 N	28 42 · 98 W		
18 : 58 : 00		final INU	posn:	38	31 · 26 N	28 43 · 66 W		

Flight Manager's Faults / Incidents Log

Flight No. B034

Instruments

HORACE crashes 1 preflight
1 during flight

No RADALT data

Loss of derived data between 10 26 20 – 10 27 50 (approx. times).

Not noticed until data being correctly displayed again, when HORACE reported that data was being recorded and the flight number was correct.
Nothing obviously wrong in the DRS log file.
In DLU configuration: error messages (invalid port address) for PRTAFT DLU.

Aircraft